

ENTOMOLOGY.—*The Stratiomyidae (Diptera) of New Caledonia and the New Hebrides with notes on the Solomon Islands forms.*¹ MAURICE T. JAMES, State College of Washington.

In the course of obtaining material for my publication on the Stratiomyidae of the Solomon Islands (James, 1948), I received a considerable number of specimens of flies of this family from the areas both north and south of that archipelago. The present paper deals with the interesting and relatively unknown fauna of the more southern area, comprising New Caledonia and the New Hebrides.

This fauna shows a large element of endemicity, as attested by the fact that 10 of the 19 species appear to be new, and of the remaining 9 only 5 are known to occur outside of the Solomons, New Caledonia, and the New Hebrides. From the standpoint of genera, also, the fauna is peculiar. Two of the genera discussed here are described as new, whereas a third was described in my Solomon Islands paper. One genus (*Eufijia*) apparently enters this region from Fiji, another (*Acanthasargus*) from Australia, and another (*Drosimomyia*) belongs to the African fauna! *Eulalia nitidissima* probably belongs to a genus endemic to the South Pacific. Finally, the development of the Myxosargini in this area is interesting. There are a few widespread generic elements, such as *Eulalia* (*sensu stricto*, as represented by *E. novae-caledoniae*), *Sargus*, *Hermetia* (obviously a recent introduction), and *Microchrysa*, as well as some of narrower, though still wide, distribution, such as *Chrysochroma*, *Nothomyia*, *Wallacea*, *Salduba*, and *Lophoteles*.

I am also taking the opportunity in this paper to make some corrections and additions to my Solomon Islands paper.

The following key will separate those species of Stratiomyidae which are known to occur in the New Hebrides and New Caledonia:

- 1. Cross vein m-cu present, last posterior vein (Cu₁) consequently arising from second basal cell. 2
- Cross vein m-cu absent, all posterior veins distinctly arising from discal cell. 10

- 2. Flagellum of antenna elongated, consisting of 6 closely united segments, the last 2 forming a distinct style but never an arista; anal vein (2d A) beyond thickened basal area arcuate but never sinuous (Stratiomyinae, Eulaliini) 3
- Flagellum of antenna shortened and bearing an apical or subapical arista, which is much longer than basal complex of flagellum . . . 4
- 3. Front, vertex, mesonotum, and scutellum distinctly pilose and pollinose; antenna wholly yellow, scape and pedicel each about as long as broad and style acute; cross vein r-m distinct . . . *Eulalia novae-caledoniae* Lindner
- Front, vertex, mesonotum, and scutellum over practically entire area shining and completely devoid of pile and pollen; antennal flagellum brownish to black except basally; scape and pedicel each distinctly longer than broad, and style blunt; cross vein r-m absent *Eulalia nitidissima*, n. sp.
- 4. Anal vein distinctly sinuous (Fig. 1, b), if feebly so mesonotum is patterned in black and yellow; thorax not metallic green or blue (Stratiomyinae, Myxosargini) 5
- Anal vein straight or arcuate, never sinuous; thorax in large part metallic green or blue (Sarginae) 8
- 5. Mesonotum black with prominent yellow vittae; abdomen yellow with paired black spots on segments; elongate species with an elongate-ovate abdomen; anal vein distinctly, though feebly, sinuous.
 - Hoplistopsis geminatus*, n. sp.
 - Mesonotum except postalar calli black; abdomen black or rosaceous with black markings; shorter, more robust species with a short-ovate abdomen; anal vein more strongly sinuous 6
- 6. Occipital orbits distinct and clearly margined; vein R₄ absent; legs yellow, at most a femoral band and tips of tarsi darkened . . 7
- Occipital orbits undeveloped or indistinct and not margined; vein R₄ present; at least femora black *Nothomyia brevis* (Bigot)
- 7. Abdomen entirely black.
 - Acanthasargus inflatus*, n. sp.
 - Abdomen with rosaceous markings in the form of broad transverse bands comprising most of terga 2 to 4. . . *Acanthasargus roseus*, n. sp.
- 8. Ocellar triangle much longer than broad; eyes separated in both sexes, somewhat more broadly so in female. *Sargus mactans* Walker
- Ocellar triangle approximately equilateral; eyes of male broadly contiguous, of female widely separated 9
- 9. Larger species, 8 to 9 mm in length; abdomen in both sexes metallic blue or green; maximum width of anal cell but little greater

¹ Received April 28, 1950.

than that of second basal cell, distinctly less than combined width of two basal cells.

Cephalochrysa chrysidiformis (Lindner)

Smaller species, about 4 mm in length; abdomen of female metallic blue or green, of male in large part yellow; maximum width of anal cell equal to combined width of two basal cells.

Microchrysa flaviventris (Wiedemann)

10. Four veins arising from discal cell, that is, media 3-branched; terminal segment of flagellum elongated, either flattened and vanelike or forming a terminal arista, the preceding 2 or 3 segments distinctly furrowed longitudinally on inner surface....11

Three veins arising from discal cell, that is media only 2-branched; terminal segment of antennae forming an arista or aristiform style, the preceding segments not as described above (Pachygastrinae).....13

11. Terminal antennal segment forming an arista (Chrysochlorinae).

Chromatopoda annulipes (Walker)

Terminal antennal segment vanelike (Hermetiinae).....12

12. Antennal scape 5 times as long as maximum width, longer than style; eyes pilose; abdomen without translucent spots.

Notohermetia pilifrons, n. sp.

Antennal scape at most 2 or 3 times as long as maximum width, much shorter than style; eyes bare; second abdominal segment with a pair of translucent or pale semitranslucent spots.....*Hermetia illucens* (Linnaeus)

13. Abdomen short, at least as broad as long...14
Abdomen distinctly longer than broad....16

14. Second antennal segment prolonged fingerlike along inner margin of flagellum; antennae arising from a pair of frontal prominences.

Artemitomima mirabilis James

Second antennal segment transverse or at most moderately convex apically, not prolonged along inner margin of flagellum; antennae not located on prominences.....15

15. Scutellum on its posterior margin with several pairs of setiferous cornicles, the apical pair being spinelike; basal complex of flagellum much longer than broad, spindle-shaped; vein R₄ normally present; abdomen of male densely silvery-tomentose.

Wallacca dorsalis, n. sp.

Scutellum without cornicles or spines on its apical margin; basal complex of flagellum not as long as broad; vein R₄ absent.

Drosinomymia baueri, n. sp.

16. Scutellum with 2 long spines; wing cuneiform, alula not developed; basal complex of flagellum no longer than broad.

Eufjia ovalis, n. sp.

Scutellum without spines.....17

17. Second antennal segment produced thumblike into flagellum on inner side; basal complex of flagellum much longer than wide; wing

cuneiform, without alula; hind femur thickened, with small blunt spines below.

Salduba australis, n. sp.

Second antennal segment distinctly convex, but not produced thumblike into flagellum on inner side; basal complex of flagellum scarcely longer than wide; wing without distinct alula; hind femur slender without spines below.....18

18. Basal complex of antennal flagellum distinctly blackish to brownish dorsally; second antennal segment with black hairs apically; scutellum in male wholly black-tomentose....*Lophoteles cheesmanae*, n. sp.

Basal complex of antennal flagellum wholly yellow; or at most slightly infuscated dorsally; second antennal segment wholly yellow-haired; scutellum in both sexes with some yellow tomentum.

Lophoteles plumula Loew

Genus *Eulalia* Meigen

Eulalia Meigen, Nouvelle classification: 21. 1800.

Eulalia novae-caledoniae Lindner

Eulalia novae-caledoniae Lindner, Ann. Mag. Nat. Hist. (10) 20: 378. 1937.

Lindner described this species from a female taken at Bourail, New Caledonia, May 26, 1928, by T.D.A. Cockerell. The male is quite similar in appearance; the vertical triangle is black, the face orange-yellow with silvery pile, and the legs entirely pale yellow. The mesonotum of the female is golden-tomentose and lacks erect pile except laterally; in the male the golden tomentum is confined to the lateral margin and the entire mesonotum is clothed with erect, yellow pile and with minute appressed black or shiny green scales, the color depending on the light incidence; these scales are also present in the female, but they are sparse and not so evident because of the golden tomentum. The yellow abdominal margin is broader in the male, and it is more nearly exact to describe this sex as having a yellow abdomen with a median black band.

This is a typical *Eulalia* in all respects. The male differs from *E. maculata* (de Meijere) in its yellow face, yellow upper pleura, wholly yellow legs, abdominal pattern, green aspect of the mesonotal scales, and other respects, but it is clearly congeneric with that species as well as with such species as the European *E. hydroleon* (Linnaeus), the American *E. arcuata* (Loew), and the Australian *E. regisgeorgii* (Macquart).

NEW CALEDONIA: Noumea, May 23 and April 6, 1945 (H. E. Milliron), 2 males; Noumea, September 7, 1944 (Wilfred Crabb), 1 male.

NEW HEBRIDES: Santo, August to September 1929 (L. E. Cheesman), B. M. 1929-537, 1 female; Malekula, February 1930 (Cheesman), 1 female; Segond Channel, Espiritu Santo, March 26, and August 16, 1944 (Jean Laffoon), 3 females.

Eulalia nitidissima, n. sp.

Female.—Front across ocellar triangle about one-third (46:126) width of head, widening somewhat to plane of antennal insertion (54:126); frontal callus not distinctly defined posteriorly, the front therefore smooth except for the transverse supraantennal groove and the midfrontal suture; face protuberant, evenly rounded; occipital orbits very narrow. Head extremely glossy and over most of its area entirely bare; a few short white hairs on the cheek; a pair of small spots at each end of the supraantennal groove, a similar spot adjacent to the eye on each side of the face, and most of the occipital orbit, silvery tomentose. Middle of facial prominence and lower angle of oral margin castaneous, head otherwise black. Antennal ratio (same units as head measurements), 13:13:16:10:8:7:2:6; flagellum slender its fourth segment tapering to the two-segmented style, which is subacute apically; scape, flagellum, and extreme base of first flagellar segment yellow; first, second, and third flagellar segments otherwise castaneous, the fourth segment and the style black. Proboscis black, the labella with a few black hairs.

Mesonotum and scutellum polished and completely bare, except for a few brassy hairs along the notopleural suture and immediately above the wing bases; black except the yellow lower part of the humeri and the small castaneous areas immediately around each scutellar spine; scutellar spines very short and weak, yellow. Sides of thorax black except posterior parts of pteropleura, which are yellow; mesopleura, sternopleura, and pteropleura shining, with a few scattered hairs; other pleural areas white-pollinose; some noticeable white hairs and white tomentum anteriorly on each propleuron and noticeable whitish hairs on the metapleuron. Legs mostly yellow; last three tarsomeres of anterior tarsus blackish; tarsi otherwise white. Halteres white, with yellowish knobs. Wings hyaline; strong veins yellow before humeral cross-vein and beyond discal cell, otherwise (except the costa, which is more extensively yellow) black; stigma strong, blackish to apex of discal cell, yellow beyond. Vein r-m wanting, the discal

cell broadly bordering R_5 ; veins M_1 , M_2 , and Cu_1 beyond m-cu merely weak folds; veins Cu_2 and 2d A beyond basal part but little stronger. R_4 wanting.

Abdomen black, without a pattern but with much of tergum I yellow and with suggestions of castaneous medially on tergum II and apically on terga II to V; venter yellow.

Length, 6 mm.

Holotype.—Female, Espiritu Santo, New Hebrides (Gilbert Banner); in the American Museum of Natural History.

Remarks.—The completely bare, highly polished mesonotum and dorsal aspects of the head will distinguish this species from any *Eulalia* known to me. Bezzi describes such a species from Fiji, in *Odontomyia gagathina*, and from his description the two species seem to be closely related. He makes no mention of the absence of cross vein r-m, but neither does he in respect to *O. parallelina*, in which that cross vein is absent. *E. nitidissima* differs from the description of *gagathina* in a number of respects, for example the two pairs of silvery spots on the face and frons, the pollinose pleural areas, the yellow venter, and the yellow femora.

The reference of *nitidissima* to *Eulalia* is provisional. It certainly does not belong to that genus in the strict sense but at present it seems best to refer it there tentatively, until a better classification of the *Eulalia* complex, particularly in this area, can be proposed.

Hoplistopsis, n. gen.

Body slender, front narrow; at its narrowest in the male about as wide as diameter of an ocellus, in the female about width of ocellar triangle. Median line of frons well impressed; frontal callus distinct, entire, white. Occipital orbits undeveloped in the male, developed on the upper half only and narrow in the female. Eyes bare. Antennal scape longer than its maximum width, much broader apically than basally; pedicel broader than long, as broad as flagellum; flagellum about as broad as long, the arista long, bare. Thorax and abdomen, black variegated with yellow, pile and tomentum inconspicuous. Scutellum with two short spines. Abdomen ovate. Legs slender, simple, the basitarsus always longer than the remaining tarsomeres combined. Wing venation as in Fig. 1, b; vein 2d A distinctly sinuous.

Generotype, *Hoplistopsis geminatus*, n. sp.

Hoplistopsis geminatus, n. sp.

Fig. 1

Male.—Eyes at narrowest part of front separated by 0.02 head width, head black, except frontal callus, which is ivory; hair very inconspicuous, a few black hairs on the ocellar triangle, some yellowish hairs on the face, and some moderately long yellow hairs on the cheeks. Antennae black with black hairs on scape and pedicel; proboscis pale yellow.

Thorax black, variegated with pale yellow as follows: humeri and broad lateral margins of mesonotum backward to the suture; a pair of discal stripes running from the humeri (and confluent there with the lateral margins) to a point midway from the suture to the scutellar base; scutellum except spines; supraalar calli; and a large pleural area extending from below each humerus across the upper and posterior parts of the mesopleuron, across the upper part of the sternopleuron and hypopleuron and including the entire pteropleuron and most of the metanotal slopes. Scutellar spines brown. Thorax with inconspicuous pale tomentum and a little yellow pile on the propleura and metanotal slopes. Legs, including coxae, mostly yellow; hind tibia, except at base, brownish, with a submedian, slightly swollen annulus yellow; front tarsus except basitarsus and hind tarsus beyond apical fourth of basitarsus becoming blackish. Wings hyaline, veins brown. Halteres yellow.

Abdomen yellow, with a series of paired, sub-lateral, quadrate black spots, on the terga, one pair to the segment; these are confluent medially on the first segment and tend to become evanescent on the fourth almost disappearing entirely

on the fifth. Venter uniformly yellow. Genitalia yellow.

Length, 7 mm.

Female.—Eyes at narrowest part of front separated by 0.09 head width; front gradually, but slightly widening from anterior ocellus to callus. Hind tibia brown only subbasally and apically; middle tarsus sometimes blackish apically. Otherwise, as described for the male.

Holotype.—Male, Hienghene, New Caledonia, December 3, 1944 (Wilfred Crabb), U.S.N.M. no. 59895.

Allotype.—Female, same data.

Paratypes.—1 male, 3 females, same data.

Remarks.—This genus shows relationships to both *Nothomyia* and *Acanthasargus*; it may be distinguished from the latter by the incomplete development of the occipital orbits, from the former by patterning of the thorax and abdomen, and from both these genera by its elongated form, with long narrow wings and a more elongated cell Cu_1 , and by the very narrow front of the female. The appearance is more that of a *Rhaphiocera* or *Hoplistes*, but the relatively unmodified venation and the sinuous vein Cu_2 place it in the Myxosargini.

Hardy (1943) has suggested that the Myxosargini "probably . . . are marking some phylogenetical development along which genus *Sargus* may have had its origin." This statement seems reasonable. The sinuous vein Cu_2 appears to be a primitive character in the sargine-stratiomyine stem; some species of the primitive *Cyphomyia* possess it, but this vein becomes straight, usually with an apical angular projection downward, in the Sarginae and the Stratiomyini. The Sarginae

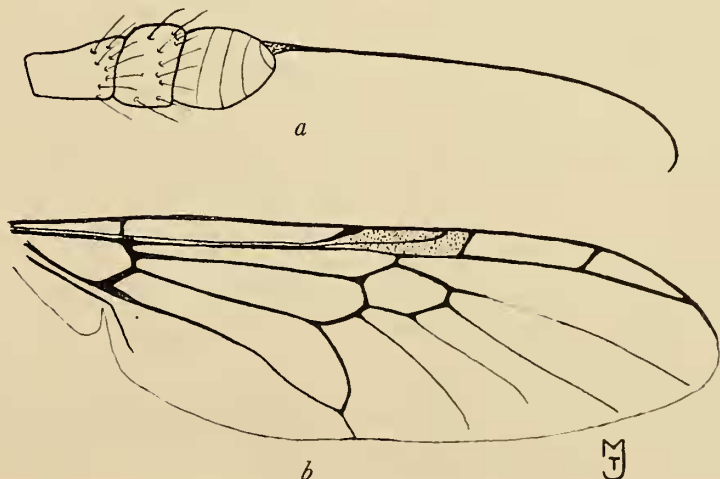


FIG. 1.—*Hoplistopsis geminatus*, n. gen. and sp.: a, Antenna; b, wing.

move toward the direction of a development of a compact aristate flagellum, an elongated slender body, an unspined scutellum, a dichoptic head in both sexes, and an unpatterned, often metallic, thorax and usually also abdomen, while retaining a relatively primitive wing venation. The Stratiomyinae have a more primitive antennal structure, especially in *Cyphomyia* and its relatives; scutellar spines tend to disappear only in some of the more specialized members of the group; there is a strong tendency toward patterning of the thorax, abdomen, and even the head, and toward a reduced wing venation; the holoptic head prevails in the male sex; the body is usually relatively short and robust. The Analocerinae, which probably arise from the common stem of the sargine-stratiomyine group, tend toward a patterned thorax and abdomen and a *Sargus*-like body; the wing venation is relatively primitive but tends toward bizarre developments as do the scutellar, leg, and general body modification. The Myxosargini have probably arisen from near the base of the common stem and have retained the primitive venation, including the sinuous 2d A (but frequently with the loss of R₄ and, rarely, of M₃), but have tended toward the aristate antenna in the more highly evolved forms. The patterning of the thorax and abdomen and the aristate antenna combine with some more primitive characters to define the genus *Hoplistopsis*.

Genus *Nothomyia* Loew

Nothomyia Loew, Berliner Ent. Zeitschr. 13: 4. 1869.

Nothomyia brevis (Bigot), n. comb.

?*Rhaphiocer brevis* Bigot, Ann. Soc. Ent. France (6) 7: 26. 1887.

Male.—Head black, mostly subshining; frontal triangle with a pair of small oval yellowish-white spots separated by a shining area, pile of the face blackish, that of genae mostly silvery. Antennae black; arista well defined, slender throughout; ratio of scape, pedicel, flagellum and arista 7:5:7:36.

Thorax black, subshining; scutellum on apical half and spines, except extreme apices, yellow; spines about 0.6 as long as distance separating them at their bases. Pile of mesonotum mostly and of scutellum wholly yellowish-white; mesonotum in addition with yellow tomentum. Pleura and sterna subshining and silvery-pilose except a bare shining area on each mesopleuron from the anterior coxa to the notopleural suture. Legs

with median third of middle and hind tibiae, middle and hind basitarsi, and second segment of middle and basal part of second segment of hind tarsi, pale yellow; otherwise black. Pile of legs mostly pale. Wings hyaline; veins brownish except near base of wing where they are yellowish; stigma well marked, brown; vein R₁ present. Halteres yellow, knobs almost whitish.

Abdomen black, with reddish or purplish reflections in certain lights; terga with long silvery hairs laterally and on segment five, otherwise with inconspicuous short black pile; sterna with appressed silvery hairs. Genitalia yellowish; dististyle robust, black, subconical, somewhat curved inward apically.

Length, 4.5 mm.

Female.—Front about 0.15 head width at vertex, about 0.3 head width at plane of antennal insertion; gradually widening from above downward, but more abruptly so below the frontal callus; middle fourth of front shining, the broad ocular orbits subshining; frontal callus with two yellowish spots as in male but more widely separated. Pile of face silvery. Scutellum black at base, otherwise yellow. Middle and hind tibiae somewhat more extensively yellow than in the male; first three segments of middle and hind tarsi yellow. Pile of thorax and abdomen shorter and less conspicuous. Otherwise, except sexually, as described for the male.

Redescribed from the following material: NEW CALEDONIA: Noumea, October 30, 1944 (Wilfred Crabb), 2 males, 1 female; Hienghene, December 3, 1944 (Crabb), 2 males; Corela, March 11, 1945 (David G. Hall), 1 male, 1 female; Bourail, December 1930 (L. E. Cheesman), B. M. 1931-123, 1 male.

I am indebted to James E. Collin for information concerning the wing venation of Bigot's type, particularly in respect to the presence of vein R₄ and the sinuosity of the 2d A. On the basis of this information, I feel virtually certain that I have Bigot's species. The original description agrees wholly with my material except Bigot's statement that the front tarsi are castaneous at the base, and in my material some color variation is evident, particularly in the Bourail specimen, in which the apices of the femora and the base and apex of the front tibiae are yellow. This species traces in my key to *Nothomyia* (James, 1942, p. 53) to couplet 7, but the arista is strongly differentiated and vein R₄ present.

Genus *Acantharsargus* White

Acantharsargus White, Pap. Roy. Soc. Tasmania
1914-15: 60. 1914.

Members of this genus differ from the closely related *Nothomyia* in that they have the occipital orbits distinct and sharply margined behind, in both sexes. There is a tendency toward variegation in the color of both the thorax and the abdomen. The following key, modified from Hardy (1932, p. 48), will serve to separate the known species.

1. Thorax and abdomen entirely black. 2
Thorax at least yellow or rosaceous in part. . . 3
2. Scutellum and scutellar spines black.
 - Scutellum with a yellow bar between yellow scutellar spines. *pallustris* White
 - Scutellum with a yellow bar between yellow scutellar spines. *gracilis* White
3. Abdomen entirely black. *inflatus*, n. sp.
Abdomen margined and spotted or banded with yellow or rosaceous. 4
4. Abdominal markings rosaceous, in the form of broad transverse bands comprising most of terga 2 to 4. *roseus*, n. sp.
Abdominal markings yellow, limited to lateral margins and discal spots. 5
5. Scutellum and spines entirely yellow; legs almost entirely yellow. *flavipes* Hardy
Scutellum black, scutellar spines yellow; legs yellow, with sections of the femora and tibiae black. *varipes* Hardy

Acantharsargus inflatus, n. sp.

Female.—Occipital orbits yellow on upper half, head otherwise black. Width of front at vertex 0.21, at upper margin of frontal callus 0.30, at level of antennal insertion 0.40, head width; front subshining above callus, with appressed blackish hairs. Occipital orbits shining, inflated below the yellow area and there ultimately becoming subshining as a result of the setiferous punctures; pile of face and genae yellow. Antennae black; arista sharply differentiated. Proboscis yellow.

Thorax mostly black; scutellum including spines, most of humerus and the margin of mesopleuron along notopleural suture to wing base, a spot posteriorly on each pteropleuron, and supraalar calli, yellow; mesonotum with yellow tomentum; pleura white pilose. Wings hyaline; veins brownish yellow; vein R_4 missing. Halteres yellow. Coxae black, legs otherwise yellow, the tarsi becoming blackish apically; hind tarsi missing in type.

Abdomen black; some whitish pile laterally especially on basal segments; terga with inconspicuous appressed black hairs; sterna with appressed yellowish hairs.

Length, 3.5 mm.

Holotype.—Female, Noumea, New Caledonia, October 30, 1944 (Wilfred Crabb), U.S.N.M. no. 59896.

Remarks.—It is possible that this is the female of *A. roseus*; however, the difference in antennal structure (the arista in this species being distinctly differentiated) whereas in *roseus* it grades somewhat into the basal flagellar complex), together with the difference in coloration, makes such a reference doubtful.

Acantharsargus roseus, n. sp.

Male.—Head mostly black and shining to subshining; the occipital orbits narrowed and pinkish yellow or rosaceous above, black and expanded below; all pile yellow. Antenna black; flagellum with basal three segments distinct, the fourth almost as wide basally as the apex of the third, and gradually narrowing through the fifth to the aristiform sixth. Proboscis yellow.

Thorax mainly black; humerus, notopleural margin of mesopleuron from humerus to wing base, a spot on the pteropleuron adjacent to wing base, and a large spot on the upper part of the sternopleuron, connected or nearly so with a similar spot on the upper margin of the hypopleuron, rosaceous; posterior margin of pteropleuron, postalar calli, and broad sides and apex of scutellum, including spines, yellow, sometimes tending to rosaceous. Scutellar spines about 0.4 as long as their basal separation. All pile white, that on mesonotum appressed. Halteres yellow, the knobs white. Wings hyaline, veins brownish yellow. Vein R_4 missing. Coxae and apical two tarsomeres blackish, legs otherwise yellow.

Broad sides of first tergum, second tergum except narrow apex, and third and fourth except narrow bases and apices, rosaceous; genitalia yellow; abdomen otherwise black. Some long erect white pile laterally on dorsum; pile otherwise appressed, whitish on venter, on genitalia and on rosaceous areas, otherwise mostly black. Dististyli short, robust, subconical, incurved.

Length, 4 mm.

Holotype.—Male, St. Louis Valley, New Caledonia, March 24, 1945 (H. E. Milliron); University of Minnesota collection.

Paratopotypes.—14 males, same data.

Remarks.—Some color variation occurs. Certain specimens have an indefinite pair of rosaceous to yellow spots on the front, and the color of the pale areas of the scutellum and postalar calli may vary from yellowish to rosaceous. The hypo-

pleural spot and the legs, however, are in all specimens distinctly yellow and in contrast even to the variable scutellum.

Genus *Sargus* Fabricius

Sargus mactans Walker

Sargus mactans Walker, Proc. Linn. Soc. London 4: 97. 1860.

The material examined differs from that of the Solomon Islands and northward in having the metapleura white or clear yellow and the rest of the pleural sclerites more extensively whitish or yellow than in the more northern forms. This form should, perhaps, be considered a geographical subspecies, but I feel that, because of the difficulties involved in this complex and the lack of sufficient material, to describe it as such would be premature.

S. mactans has been recorded from the Solomon Islands northward to India and the Philippine Islands. Neither it, nor any other true *Sargus*, is known from Fiji. NEW CALEDONIA: St. Louis Valley, March 22, 1945 (H. E. Milliron), 1 male, 1 female; Noumea, April 1, 1945 (H. E. Milliron), 1 female.

Genus *Cephalochrysa* Kertész

Cephalochrysa chrysidiformis (Lindner)

Microchrysa chrysidiformis Lindner, Ann. Mag. Nat. Hist. (10) 20: 373. 1937.

NEW HEBRIDES: Espiritu Santo Island, August 1943 (W. Bauer), 1 female; Segond Channel, Espiritu Santo Island, May 30, 1944 (J. Laffoon), 1 female.

Genus *Microchrysa* Loew

Microchrysa flaviventris (Wiedemann)

Sargus flaviventris Wiedemann, Analecta Ent.: 31. 1824.

In my account of the Stratiomyidae of the Solomon Islands (James, 1948, p. 199), I mis-determined this species, and records included in that paper should refer instead to *M. fuscistigma* de Meijere, a species originally described from New Guinea. *M. flaviventris* occurs farther northward, the common form in India and the Philippine Islands apparently being that species; its occurrence south of the Solomon Islands is, therefore, surprising.

NEW HEBRIDES: Espiritu Santo Island, September 1944 (K. L. Knight), 1 male.

The following key will serve to separate the sexually dichromatic species of *Microchrysa*

known to occur in the Palearctic and Oriental Regions.

1. Vein M_{1+2} between its contact with cross vein r-m and its furcation (*ie.*, upper apical border of discal cell) almost evanescent; abdomen of male yellow, with a prominent black spot on tergum V, that of female metallic green or blue; hind femur and hind tibia each with a black annulus, sometimes the femur extensively black.... *flaviventris* (Wiedemann)
Vein M_{1+2} between its contact with r-m and its furcation strong..... 2
2. Stigma often infuscated, at least yellowish; abdomen elongated, scarcely broader than thorax.... *fuscistigma* de Meijere
Stigma scarcely darker than rest of membrane; abdomen broader than thorax.
laodunensis Pleske

Genus *Chromatopoda* Brauer

Chromatopoda annulipes (Walker)

Sargus annulipes Walker, List of the specimens of dipterous insects in the collection of the British Museum, pt. 3: 515. 1849.

NEW HEBRIDES: Ounua, Malekula, February 1929 (L. E. Cheesman), B.M. 1929-234, 3 males; N. E. Malekula, May 1930 (Cheesman), B. M. 1930-178, 1 male; Espiritu Santo, April and August 1943 (W. Bauer), 1 female, 2 males; Turtle Bay, Espiritu Santo, February 11 and 17, April 2, May 18, 19, 23, and 24, 1944, and November 7, 1943 (J. Laffoon), 4 males, 4 females; Segond Channel, January 24, February 8, and April 9, 1944 (Laffoon), and August 1944 (L. E. Rozeboom), 3 males, 2 females.

Notohermetia, new genus

Close to *Hermetia* and differing from that genus chiefly in the antennal structure, particularly in the elongated scape, which is five times as long as its maximum width. Antenna longer than head, about two-thirds head width; flagellum grooved inwardly as in other Hermetiinae; terminal segment about half as long as preceding flagellar segments combined, vane-like as in *H. illucens* but more distinctly pilose and proportionately much shorter. Eyes densely and distinctly pilose. Scutellum unspined. Body slender; abdomen much longer than thorax and three times as long as wide, parallel-sided. Venation essentially as in *Hermetia*. The general habitus is that of a slender *Hermetia*.

Genotype, *N. pilifrons*, n. sp.

Notohermetia pilifrons, n. sp.

Male.—Head broad, concave posteriorly; length in micrometers units (60 = 1 mm) 50, width 134; bluish green, subshining to shining, fairly thickly clothed with black hair which is of moderate length on the face but becomes longer on the front and vertex, that behind the ocelli being definitely the longest found on the entire insect. Vertex 0.3 head width, front widening to 0.37 at plane of antennal insertion. Antennal measurements in micrometer units: scape, 26; pedicel, 8; flagellum excluding style, 35; style (last flagellar segment), 20.

Thorax mostly bluish green; a calluslike area on posterior margin of mesopleuron, whitish; some poorly defined areas on pteropleura and hypopleura reddish; pile mostly pale, inconspicuous, only that of the metapleura prominent. Legs largely black, the knees, the basal third of the middle and basal two-fifths of the hind tibiae, the middle basitarsus and second tarsomere, and the basal half of the hind basitarsus whitish. Halteres white. Wings rather deeply infuscated except basally; veins brown.

Abdomen long, slender, almost parallel-sided, slightly constricted on the first segment and slightly widening on the fourth and basal part of the fifth; bluish green on the first tergum, becoming reddish on the second and third, reddish brown on the fourth and fifth; sterna somewhat paler, almost yellow toward apex. Genitalia yellow.

Length, 7 mm.

Holotype.—Male, Santo, New Hebrides, August–September, 1929 (L. E. Cheesman), B. M. 1929-537; in the British Museum (Natural History).

Genus **Hermetia** Latreille**Hermetia illucens** (Linnaeus)

Musca illucens Linnaeus, *Systema naturae*, ed. 10, 1: 589. 1758.

NEW CALEDONIA: Noumea, September 1, November 7, 1944 (Wilfred Crabb), 1 male, 1 female; La Fea, May 28, 1945 (H. E. Milliron), 1 male; St. Louis Valley, March 24, 1945 (H. E. Milliron), 1 male.

Genus **Artemitomima** James

Artemitomima James, *Proc. U. S. Nat. Mus.* 98: 205. 1948.

Artemitomima mirabilis James

Artemitomima mirabilis James, *Proc. U. S. Nat. Mus.* 98: 206. 1948.

This species was described from a single female, from Guadalcanal Island. The male described below is certainly congeneric and apparently conspecific, as all variations from the female are of such a nature as can be explained on the basis of sexual dimorphism. The fact that the male specimen is slightly teneral may account for some of the color variations.

Male.—Vertex 0.15 head width, narrowing gradually on the front to about 0.075 head width at half the distance from the anterior ocellus to the antennal insertion, thence widening to the facial width which is approximately as in the female. Frontal carinae present though feeble, evanescent on lower half of front; area between carinae yellowish (not fully colored?). Trochanters yellow, femora yellow except apex of front, apical third of middle, and apical fourth of hind pair; tibiae yellow, blackish on basal third to half and at apex; first two segments of middle and first and basal half of second segment of hind tarsi yellow; legs otherwise black. Wing with brownish spot at apex of discal cell; the narrow band, extending from apical part of basal cells across veins Cu_2 and $Cu_2 + 2d A$, interrupted in second basal cell and not as prominent as in the female; wings otherwise hyaline. Tomen-tum of abdomen silvery. Hypopygium slender, shining black; forceps slender, rounded apically, yellow.

Length 7.5 mm.

Described from a male, Malekula, New Hebrides, February 1930 (L. E. Cheesman), B. M. 1930-178; in the British Museum (Natural History).

Genus **Wallacea** Doleschall

Wallacea Doleschall, *Nat. Tijdschr. Ne.l. Ind.* 17: 82. 1858.

The genus *Wallacea* is represented in the South Pacific and in Australia by a group of closely related species which have the following characters in common: Eyes separated, distinctly pilose in both sexes, more widely separated in the female but more distinctly pilose in the male; scutellum with a row of setiferous dentulae which become more prominent toward the apex, the apical pair appearing as small spines, about one-fourth as long as the scutellum, and much more

prominent than the similarly located dentulae in the more northern species; male abdomen with the second and third terga densely silvery-tomentose, the tomentum completely concealing the ground color and appearing glossy under reflected light. The following key will separate the known species of this group.

1. Scutellum with the pale tomentum either not reaching the apex even along the median line (male) or interrupted subapically (female); eyes brownish- to black-haired; mesonotum anteriorly with 2 prominent vittae where the scattered white tomentum is lacking; front of male about 0.13 to 0.14 head width; fifth abdominal segment of male devoid of white hairs or tomentum. 2

Scutellum with white or yellow tomentum reaching apex medially; eyes white-haired; mesonotum with at most only narrow obscure vittae anteriorly; front of male about 0.17 to 0.18 head width; fifth abdominal segment of male with a patch of white tomentum on each side (*splendens* Hardy).

argentea Doleschall

2. Mesonotal tomentum of female brassy, at least posteriorly; black mesonotal vittae confluent with black lateral postsutural areas, in both sexes, or mesonotum predominately black-tomentose. *dorsalis*, n. sp.

Mesonotal tomentum of female at most slightly yellowish; mesonotal vittae reduced, not confluent with lateral areas, in male not reaching more than halfway to suture.

connectens, n. sp.

Wallacea dorsalis, n. sp.

Male.—Head black. Front about 0.14 head width, nearly parallel-sided, a little narrower at middle, as broad or slightly broader than ocellar triangle; granular above, polished in middle below; face black, broadening toward lower eye margins where it is about 1.7 width at antennal insertions; facial margins and lower frontal margins conspicuously silvery-pruinose; hairs of front and face black. Eyes with distinct though somewhat scattered gray pile. Antennae reddish, darkening to brown toward end of flagellum; style shining black on basal segment and basal part of terminal segment, the latter becoming brown medially and white to whitish on its apical half or more.

Thorax including scutellum black, with erect black hairs which are mostly longer than the apical scutellar spines; a patch of silvery scale-like tomentum just above, and a similar patch just below, the notopleural suture; similar though usually smaller patch just above each wing base;

tomentum of mesonotum and scutellum otherwise black and consequently inconspicuous, except for a few scattered scales, particularly in front of and at the base of the scutellum. Sternum with appressed whitish hairs.

Apices of femora yellow; middle and hind tarsi yellow, becoming brownish and then blackish on the apical segments; legs otherwise black, black-haired except the coxae, which are whitish-haired. Wings hyaline, veins brownish yellow. Halteres blackish, the knobs brownish. Abdomen black; second and third terga with dense silvery tomentum which entirely conceals ground color and which gleams brightly under reflected light; first, fourth, and fifth terga and all sterna with short black recumbent hairs, the fourth tergum in addition with a few scattered silvery scales. Genitalia yellow.

Length, 3.5 mm.

Female.—Front 0.25 head width; face broadening toward lower eye margins to about 1.4 width of front at vertex or 1.25 at antennal insertions. Front on upper part with some scattered yellowish tomentose hairs. Hairs of face mostly pale, apical segment of antennal style almost wholly white. Thorax mostly with white (lateral) and yellow (dorsal) tomentum; a pair of vittae running from anterior margin of mesonotum to prescutellar depression, either continuous or interrupted at the suture, a rounded lateral area on each side in front of the suture, most of the mesonotal prominence behind the suture, and the apical half of the scutellum, all entirely black-tomentose. Abdomen black; no dense tomentum as described for the male, but with lateral patches on the terga, particularly noticeable on segments three, four, and five, and scattered silvery scales on segments four and five and on the apex of three. Otherwise as described in the male.

Holotype male, *allotype* female, and *paratypes* (3 males and 1 female).—Espíritu Santo Island, New Hebrides, August 1943 (W. Bauer). Holotype in the California Academy of Sciences.

Variation.—Four males, same data as the types, agree in every way except that the mesonotum has a pattern of silvery tomentum similar to that of the female, though more restricted, particularly anteriorly. The erect pile is black and conspicuous, as in the male types. These specimens probably represent a Mendelian variant. At the other extreme a male from Segond Channel, Espíritu Santo Island, August 1, 1944 (J. Laffoon), completely lacks the mesonotal pale

tomentum and has the pleural patch restricted to a small area just before the termination of the transverse mesonotal suture.

Wallacea connectens, n. sp.

Wallacea argentea Doleschall, James, Proc. U. S. Nat. Mus. 98: 208. 1948; not Doleschall, Nat. Tijdschr. Ned. Ind. 17: 82. 1858.

A comparison of the Solomon Islands form with that occurring farther northward and in Australia reveals distinctions which appear to be quite clearly of specific value. The major points of difference are given in the key; in addition to these, the erect pile of the mesonotum, in the male, is definitely longer than the width of the front, whereas in *argentea* it is shorter. The relationship between *connectens* and *dorsalis* is obviously closer than that between these species and *argentea*; in fact, *connectens* and *dorsalis* may eventually be considered geographical subspecies.

Holotype.—Male, Guadalcanal Island, Solomon Islands, 1944 (C. O. Berg); U.S.N.M. no. 59897.

Allotype.—Female, Guadalcanal Island, 1944–1945 (Berg).

Paratypes.—12 males, 22 females Guadalcanal, 1944, January 1944, and 1944–1945 (Berg); 1 male, 1 female, Lunga River Valley, Guadalcanal Island, October 3, 1944 (J. Laffoon); 2 females, Metanikau River Mouth, Guadalcanal Island, May 21, 1944 (H. E. Milliron); 1 female, Munda Point, New Georgia, 1943 (W. G. Downs); 2 males, Bougainville Island, 1944 and April 10, 1944 (Downs); 2 males, 2 females, Tenaru River, Guadalcanal Island, January 1945 (G. E. Bohart).

Genus *Drosimomyia* Kertész

Drosimomyia Kertész, Ann. Mus. Nat. Hungarici 14: 160. 1916.

The genus *Drosimomyia* is known from three previously described species, all Ethiopian. A fourth, from New Hebrides, seems to be congeneric, though differing from the genotype, *D. natalensis* Kertész, and from *oldroydi* James and presumably *mercurialis* Lindner, which I know only from the description, in the configuration of the front and face.

KEY TO THE KNOWN SPECIES OF
DROSIMOMYIA

1. Antennal flagellum dark brown and contrasting distinctly with yellow scape and pedicel; vein R_4 present, though weak.

mercurialis Lindner

Antennal flagellum at most somewhat darkened outwardly; vein R_4 absent.....2

2. Frons narrowest at antennal insertion, widening toward vertex, face also widening toward lower corner of eyes; rather slender species.

baueri, n. sp.

Frons and face nearly parallel-sided, the frons slightly wider at antennal insertion than at vertex; more robust species.....3

3. Proboscis wholly black; mesonotal tomentum brassy in male, silvery in female.

natalensis Kertész

Haustellum largely yellow; mesonotal tomentum golden in male, pale yellow in female.

oldroydi James

Drosimomyia baueri, n. sp.

Female.—A slender species, wholly black in ground color except for the appendages and ovipositor. Elevation of ocellar triangle above front prominent. Vertex about 0.37 head width, front at antennal insertion 0.25, face at lower angle of eye 0.30; fronto-facies consequently appearing rather narrow and constricted at plane of antennal insertion. Front shining, with a few inconspicuous scattered black hairs especially on the ocellar triangle; face densely silvery-pruinose on the orbits, shining with a few scattered, inconspicuous pale hairs medially. Occiput shining, with a few black hairs on the orbit above and a few yellowish ones below. Proboscis yellow, yellow-pilose. Antennae yellow, the basal two segments somewhat paler, the arista pale brown; all pile and pubescence yellow.

Mesonotum and scutellum brassy-tomentose; a pair of median vittae before the suture and the postsutural prominences black-tomentose. Pleura with the posterior half of the mesopleura and upper margin of the sternopleura silvery-tomentose; some silvery hairs on the sternopleura below; pleura otherwise shining. Legs pale yellow, wings hyaline, the stronger veins brownish to brownish yellow; vein R_4 absent.

Abdomen whitish-pruinose on segment 1, dorsally and ventrally; terga 2 and 3, except broad sides, and tergum 4 except broad sides and apex densely punctured and with black tomentum; terga otherwise, and sternua 2–5 shining; pile of tergum 5 and of sides and apex of tergum 4 yellow. Ovipositor mostly yellow.

Length, 2.5 mm.

Holotype.—Female, Espiritu Santo Island, New Hebrides, August 1943 (W. Bauer), in the California Academy of Sciences.

Paratypes.—4 females, same data.

Genus *Eufijia* Bezzi*Eufijia* Bezzi, Dipt. Fiji: 10. 1928.*Eufijia ovalis*, n. sp.

Female.—Head black, shining; rather bare, with a few hairs, yellow on the front, blackish on the upper occiput, and whitish and most abundant on the face and cheeks. Antenna bright yellow on basal two segments and flagellum, shining black on first segment of style, black on the extreme base of the terminal segment of the style, which is otherwise white with dense, soft, white pubescence. Proboscis pale yellow with concolorous hairs. Head measurements of holotype in micrometer units (60 = 1 mm): head height 31, width 45; width of front at antennal insertion 8, at anterior ocellus 16, across paired ocelli 18; first antennal segment 2.5, second 5, flagellum excluding style 9, basal segment of style 1, terminal segment of style 34.

Thorax, including scutellar spines, wholly black. Mesonotum with rather thick golden tomentum which becomes paler laterally; disc of scutellum with similar tomentum, the spines, however, bare except basally; pleura white-tomentose, the pteropleura anteriorly and the lower parts, however, largely bare and shining.

Legs pale yellow, almost whitish, the apical third to half of each femur and a similar basal part of each tibia distinctly yellow and contrasting with the paler portion. Wings somewhat clouded, with brownish veins; R_4 oblique, about 1.5 its length from apex of R_5 . Halteres yellow with infumated knobs.

Abdomen black; dorsally with a granular appearance, particularly anteriorly, and with appressed whitish to yellowish hairs; ventrally much smoother and more shining, with scattered whitish hairs, except on fifth sternum which is more granular and whitish-tomentose. Ovipositor slender, pale yellow.

Length, 3.5 mm.

Holotype.—Female Espiritu Santo Island, New Hebrides, August 1943 (W. Bauer); in the California Academy of Sciences.

Paratypes.—Female, Segond Channel, Espiritu Santo Island, July 20, 1944 (Bauer); 2 females, Malekula, New Hebrides, January 1930, B. M. 1930-178, and April 1930, B. M. 1930-393 (L. E. Cheesman). A headless specimen from Segond Channel, May 3, 1944 (J. Laffoon), is obviously this species but is not being given a type designation.

Remarks.—Five species of this genus are previously known, all described by Bezzi from Fiji (Bezzi, 1928, pp. 10–15). In Bezzi's key, *E. ovalis* traces to *E. albicornis* Bezzi except that the head is distinctly broader than high, the arista in the female (male unknown) is white except at the extreme base, where it is black, and the legs are white, the apical third of each femur and basal third of each tibia being yellow and contrasting distinctly in well preserved specimens. Vein R_4 , though distant by about $1\frac{1}{2}$ times its length from the apex of R_5 is distinctly oblique.

Genus *Salduba* Walker*Salduba* Walker, Proc. Linn. Soc. London 3: 79. 1859.*Salduba australis*, n. sp.

Female.—Head black. Front parallel-sided, slightly more than one-fifth of head; a slight carina extending from anterior ocellus to a point about two-thirds to base of antennae, where it divides into two converging low, rounded ridges, upon the extremities of which the antennae arise; face broadening toward oral margin; middle of face smooth, shining, depressed below level of sides; sides of face, except orbits, granular. Occiput, viewed from above, rather strongly concave; shining. Frons practically bare; face on punctate portion with scattered whitish hairs; facial orbits, lower part of frontal orbits, and lower half of occipital orbits densely whitish-pruinose; pile of lower posterior orbits white, that of occiput otherwise blackish. Antenna yellow, becoming reddish on flagellum; style with its pile black; ratio of scape, pedicel, flagellum, and style 8:6:16:33 (these being measurements of maximum lengths, and allowing for some overlapping as a result of the angularity of the pedicel and base of the flagellum); antenna about 1.2 maximum head width. Proboscis yellow, labella mostly brownish.

Thorax black, at most the humeri a little reddish; mesonotum granular, densely tomentose, tomentum largely golden but interrupted by three broad longitudinal black stripes, one median and one on each side removed by a golden-tomentose area from the notopleural suture; tomentum of pleura golden above, gradually merging into whitish below; a large bare shining area on each mesopleuron and pteropleuron. Coxae yellow. Femora yellow, paler at base; tibiae brownish to black, each with a median area ranging from a

narrow, indistinct annulus to about one third the member, yellow; the dark area of the front and middle tibia usually brown, that of the hind tibia blackish to black; tarsi whitish on first two segments, becoming brownish apically. Halteres yellow, knobs somewhat darker. Wings almost uniformly brownish, stigma and veins dark brown.

Abdomen except genitalia black, tending toward brownish or yellowish on the sterna, especially toward apex of abdomen, in some specimens; first four terga densely black pollinose except laterally on all segments and subbasally and subapically on the fourth; pollinose areas with short black tomentum; sides and venter sparsely punctured, with scattered whitish to yellowish hairs. Genitalia yellow.

Length, 6-6.5 mm.

Male.—Eyes broadly contiguous. Frontal triangle silvery-pollinose on orbits; median area depressed. Flagellum shorter in proportion, antennal ratio being 8:6:15:34. Black mesonotal stripes, especially median one, not so clearly defined as in female. Pile of pleura more extensively whitish. Coloration of legs similar to that of female, but yellowish areas more extensive, the middle tibia being almost entirely yellow. Wings but lightly infuscated. The specimen may be slightly teneral.

Holotype.—Female, Espiritu Santo Island, New Hebrides, August 1943 (W. Bauer), in the California Academy of Sciences.

Allotype.—Male, Malekula, New Hebrides, February 1930 (L. E. Cheesman), B. M. 1930-178.

Paratypes.—3 females, same data as holotype.

Remarks.—This form is probably only sub-specifically distinct from the one from the Solomon Islands that I have tentatively identified (James, 1948, p. 212) as *S. lugubris* (Walker). The coloration of the legs and of the mesonotal tomentum in the male of the Solomon Islands form is as I have described them for the female of *australis*; the female of the Solomon Islands form has whitish rather than golden mesonotal tomentum, and the legs are darker, the femora being predominantly black or blackish. It is probable that the Solomon Islands forms *australis*, *lugubris*, and *diphysoides* Walker are all subspecies of one species, *diphysoides* holding priority. A more thorough investigation requiring considerable material from New Guinea, the Moluccas, and nearby areas will be necessary to clarify the status of these forms.

Genus *Lophoteles* Loew

Lophoteles Loew, Berlin. Ent. Zeitschr. 2: 110. 1858.

Lophoteles cheesmanae, n. sp.

Male.—Eyes broadly contiguous. Head black; frontal triangle and face with dense silvery tomentum; occiput and vertex shining, with scattered black hairs. First and second antennal segments pale yellow, each with a few black hairs at apex above; flagellum pale yellow, brownish above; style including hairs wholly black. Proboscis brownish with concolorous hairs.

Thorax wholly black, at most brownish-black on the humeri and on parts of the pleura. Mesonotum granular with brassy-yellow tomentum laterally also with blackish tomentum, which appears from the dorsal view as black-tomentose margins, the yellow tomentum in these areas appearing from lateral view; scutellum black-haired; a prominent white-tomentose area on the hind part of the mesopleuron and extending on to the sternum and a patch of brownish-yellow hairs on the pteropleuron. Legs pale yellow; apical third to half of each femur and sometimes apices of tarsi more brightly yellow. Wings slightly infuscated; stigma deep brown; a more diffused brownish area extending from stigma across discal cell and broadly bordering vein Cu toward wing base; venation typical. Halteres blackish, the stalk somewhat paler.

Abdomen wholly black; first four terga, except laterally, granular; sides of these terga, all of fifth and venter more shining; hair of terga black, appressed, that of venter black and yellowish intermixed. Genitalia black, with yellow hairs.

Length, 4 mm.

Female.—Front at narrowest slightly under one-fourth head width, shining, with only very scattered hairs. Silvery-tomentose areas of face extending in the form of two projections, contiguous with each eye, onto lower third of front; these projections each rounded above and widely separated, leaving the median half of the front, between them, glossy. Occipital orbits developed above, though narrow. Brassy tomentum of mesonotum extending over most of scutellum. Ovipositor slender, yellow. Otherwise as described in the male.

Holotype.—Male, Aneityum, New Hebrides, October 1930 (L. E. Cheesman), B. M. 1931-127, in the British Museum (Natural History).

Allotype.—Female, Malekula, New Hebrides, January 1930 (L. E. Cheesman), B. M. 1930-178.

Paratypes.—2 males, same data as holotype; female, same data as allotype; female, Malekula, Ounua, March and April 1929 (L. E. Cheesman), B. M. 1929-343.

Variation.—The female paratype, B. M. 1930-178, has a blackish spot ventrally near the apex of each femur.

Lophoteles plumula Loew

Lophoteles plumula Loew, Berlin. Ent. Zeitschr. **2**: 111. 1858.

Lophoteles plumula Loew, Kertész, Ann. Mus. Nat. Hungarici **12**: 513. 1914.

Two males, Segond Channel, Espiritu Santo, New Hebrides, July 19 and August 10, 1944 (J. Laffoon), are tentatively referred to this species. They agree with Kertész's description except that the appressed hairs of the abdominal terga are black; the lateral erect hairs, as well as those of the venter, are, however, pale. These specimens are more slender than the males of the preceding species; the antenna except the style is wholly yellow, with yellow hairs on the first two segments; the pale tomentum of the mesonotum extends onto the scutellum; and the halteres are but slightly infuscated.

Genus *Evaza* Walker

Evaza Walker, Proc. Linn. Soc. London **1**: 109. 1857.

Evaza fulviventris Bigot

Evaza fulviventris Bigot, Ann. Soc. Ent. France (5) **9**: 220. 1879.

This species may be added to the Solomon Islands list on the basis of a male, Bougainville Island, 1944 (A. B. Gurney), which apparently belongs here. The scutellum has only one pair of spines, the middle pair being missing and without trace of scars, but this seems to be an abnormality. The side spines are in the normal position. Otherwise, the specimen checks with specimens from New Guinea and with Bigot's description. In my key to the Solomon Islands Stratiomyidae (James, 1948, pp. 187-191) this species runs to couplet 29, but may be distinguished from other Solomon Islands *Evaza* by the wholly black thoracic tomentum, the reddish-yellow legs (except the hind tibiae largely blackish), and the partially (female) to almost wholly (male) reddish-yellow abdomen.

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ENTOMOLOGY.—*New species of Nearctic Rhyacophila (Trichoptera, Rhyacophiliidae)*.¹ HERBERT H. ROSS, Illinois State Natural History Survey. (Communicated by C. W. Sabrosky.)

The four new species of Trichoptera described in this paper are from the western montane region. One of them, *Rhyacophila willametta*, is an addition to the remarkably large list of species in the genus that seem to be isolated survivors of divergent and distinctive phyletic lines.

The close structural similarity and the known distribution of *R. tucula* and *R. alberta* suggest very strongly that they were formed from isolated populations during the last glacial advance. *R. alberta* is known only from the Uintah and Rocky Mountain

ranges, distributed from Utah and central Colorado to middle Alberta. *R. tucula* occurs in the Cascade Range from Oregon to southern British Columbia, with a single known collection from the eastern ranges, in Yellowstone National Park. It is interesting to speculate that the two species arose during early Eldoran time through isolation of similar populations at points far south of their present habitats. If this is true, the slight overlap of present distribution would indicate a northward movement to areas where the various mountain ranges are close together and intermingling occurs.

¹ Received April 25, 1950.